"From experience in teaching the subject, we feel justified in the view that the careful study of the course presented in this book will do much to create in the business student an appreciation of exact science in business."

Contents—Chapter I: Interest, 1–30; II: Annuities certain, 31–61; III: The sinking fund method of paying a debt by periodical instalments, 62–76; IV: Valuation of bonds and other securities, 77–106; V: Mathematics of depreciation, 107–134; VI: The operation of funds in building and loan associations, 135–152; VII: Theory of probability with special reference to its application in insurance, 153–171; VIII: Life annuities, 172–189; IX: Net premium for some simple forms of life insurance, 190–202; X: Valuation of life insurance policies, 203–217; XI: Logarithms, 218–242; XII: Progressions, 243–248; Tables, 251–275; Index, 277–280.

NOTES.

The last number of *Proceedings of the Royal Society*, series A, volume 99, published September 1, 1921, contains biographical notices of five deceased members. These include sketches of Robert Bellamy Clifton (1836–1921; compare *1921*, 237) by R. T. G., vi–ix; of Srinivasa Iyengar Ramanuja Iyengar (1887–1920) by G. H. Hardy, xiii–xxix; and of Woldemar Voigt (1850–1919; compare *1921*, 32) by H. L., xxix–xxx. Hardy's sketch of Ramanujan appears to be identical with the one which he published earlier in *Proceedings of the London Mathematical Society* (see *1921*, 458).

Holland now publishes six mathematical journals, five of which are well known: *Nieuw Archief voor Wiskund*,[1] *Nieuw Tijdschrift voor Wiskunde*, *Revue Semestrielle des Publications Mathématiques*, *Wiskundige Opgaven met de Oplossingen*, and *Wiskundig Tijdschrift*. The sixth journal is a bimonthly periodical entitled *Christiaan Huygens, International Mathematisch Tijdschrift*, and the first number (64 pages) was published in October, 1921, by P. Noordhoff of Groningen who is also the publisher of the *Nieuw Tijdschrift*. It is planned that these periodicals shall be issued in alternate months (12 florins a year for the two; 8 florins for *Christiaan Huygens* alone). *Christiaan Huygens* is edited by Dr. F. Schuh, professor at the Technical University in Delft, with the collaboration of several others. The editors will accept articles (in English, Dutch, South-African, French, and German), which deal with topics of pure mathematics, mechanics, and mathematical physics. An honorarium of 20 florins per 16 pages is given for accepted articles. A few problems are also to be published in each number, the solutions appearing in subsequent issues. The standard of the publication is summed up in the announcement as follows: "In order to attract a wide field of readers and in that way to secure the largest useful result, the editors propose not to carry the contents to too high a level; it will have to remain largely within the field of study of doctors, doctorandi, engineers, and those who hold the diploma K_5." (The K_5-diploma is a diploma held by those who are entitled to teach in the highest type of secondary schools.)

Mathematical Philosophy, a Study of Fate and Freedom is the title of a new series of lectures by C. J. KEYSER, crown 8vo, cloth, $4.20, published by E. P.

[1] This is the leading Dutch mathematical journal. It began as *Archief, uitgegeven door het Wiskundig Genootschap* in 1856; the third, and last, volume of this series was completed in 1875. The first volume of *Nieuw Archief voor Wiskunde* was started in 1875.

Dutton & Co., New York.—The Department of Commerce, Bureau of the Census, announces *United States Life Tables, 1890, 1901, 1910 and 1901–1910* [496 pp., 52 full page graphs, 22 diagrams, and 185 tables. Price $1.25].

The twenty-seventh volume of the *Bulletin of the American Mathematical Society* contains a portrait of Professor F. N. COLE and the following dedication:

By order of the Council of the Society, this volume is dedicated to

FRANK NELSON COLE

in appreciation of his devotion to the Society during his twenty-six years as Secretary and in recognition of his efficient leadership in the editorial work of the Bulletin for the past twenty-four years.

These are published with the concluding number (June–July, 1921).

ARTICLES IN CURRENT PERIODICALS.

ANNALES SCIENTIFIQUES DE L'ÉCOLE NORMALE SUPÉRIEURE (3d series), volume 38, January, 1921: "Aplatissement suivant l'axe polaire . . . d'une goutte liquide de révolution" . . . by J. Boussinesq, 1–12 [First paragraph: "Parmi les analogies physiques auxquelles pensèrent les théologiens du XIII^e siècle pour s'expliquer la sphéricité de la Terre, il y a celle de gouttes de pluie ou de rosée que l'on voit pendre aux feuilles des arbres, gouttes si bien arrondies surtout après s'être détachées pour tomber en chute libre. Ces théologiens sembleraient donc avoir admis, au moins implicitement, la fluidité primitive de notre globe, comme le firent d'une manière explicite, cinq cent ans plus tard, Newton et ses disciples en recourant à la pesanteur. Or il peut y avoir un certain intérêt théorique à poursuivre la même analogie des gouttes d'eau, mais d'une manière plus précise que ne l'a fait Plateau' . . .]—February to June: "Sur certaines fonctions automorphes de deux variables" by Georges Giraud, 43–164 [Quotation from page 55: "Voici donc le tableau d'ensemble de notre classification des substitutions linéaires: Substitutions hyperboliques; Substitutions elliptiques, à trois points doubles, à plan double—pénétrant a l'hypersphère principale, —extérieure a cette hypersphère; Substitutions paraboliques, à deux points doubles, à plan double, à point double unique; Substitution identique."]

THE ELECTRICIAN, volume 87, August 19, 1921: "The thermionic tube, a return to simplicity" by L. C. Pocock, 232–234 ["It is of course important to remember that the practical formulæ are only approximately true under finite conditions, and it is important to understand the differential equations associated with the action of the tube, but since the final formulæ in many cases depend upon the simplifying assumptions rather than on the differential equations, it may be of use to show how a simple explanation can be given"]—September 23: "Notes of the week: Progress in harmonic analysis," 373 ["Seeing however that in actual electromotive force waves, there are an infinite number of harmonics present and only a limited number of ordinates are drawn, though Mr. Clayton's method may work out well in practice, it is hardly likely to be held in very high favor among mathematicians who cling closely to Cambridge traditions"]; "The Heaviside unit and unit impulse functions" by A. Press, 376–377 ["Consider the functions, $y = x^m$, $U = x^{dm}$. We may define the Heaviside unity function, U, as the limiting form of the prior function as m approaches zero value from positive values of m only. However, the matter is not as simple as might appear due to the prevailing laxity in the use of the word 'limit' in mathematical literature. (Compare in this regard, *Fundamental Conceptions of Modern Mathematics* by Richardson and Landis, Open Court Publishing Company)" . . . "$x^0 = x^{dm} = U$. The index, zero, implies here that m approaches this value from plus values whence the index may be written dm if preferred."—A mathematical (?) exposition.]

L'ENSEIGNEMENT MATHÉMATIQUE, volume 21, 1920, nos. 5–6 (published July, 1921): "La notion d'équivalence dans la théorie des groupes" by G. A. Miller, 251–254; "Quelques